



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/AU99/01134 (22) International Filing Date: 21 December 1999 (21.12.99) (30) Priority Data: PP 7841                      21 December 1998 (21.12.98)    AU PP 7950                      24 December 1998 (24.12.98)    AU (71) Applicant (for all designated States except US): THE WALTER AND ELIZA HALL INSTITUTE OF MEDICAL RESEARCH [AU/AU]; Royal Parade, Parkville, VIC 3052 (AU). (72) Inventors; and (75) Inventors/Applicants (for US only): WILLSON, Tracy, Ann [AU/AU]; 26 Fortuna Avenue, North Balywn, VIC 3104 (AU). SIMPSON, Richard, John [AU/AU]; 42 Stanley Street, Richmond, VIC 3121 (AU). FARLEY, Alison, Mary [AU/AU]; 36 Albert Street, Port Fairy, VIC 3284 (AU). NICHOLSON, Sandra, Elaine [AU/AU]; 66 Alma Terrace, Newport, VIC 3015 (AU). ZHANG, Jian-Guo [AU/AU]; E4/309-335 Abbotsford Street, North Melbourne, VIC 3051 (AU). BACA, Manuel [AU/AU]; 1/20 Magnolia Road, Ivanhoe, VIC 3079 (AU). NICOLA, Nicos, A. [AU/AU]; 56 Churchill Street, Mont Albert, VIC 3127 (AU). HILTON, Douglas, J. [AU/AU]; 244 Research Road, Warrandyte, VIC		3113 (AU). ALEXANDER, Warren, Scott [AU/AU]; 13 Park Street, Moonee Ponds, VIC 3039 (AU). METCALF, Donald [AU/AU]; 268 Union Road, Balwyn, VIC 3103 (AU). (74) Agents: E JOHN L HUGHES et al.; Davies Collison Cave, Level 3, 303 Coronation Drive, Milton, QLD 4064 (AU). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.	
(54) Title: SOCS-BOX CONTAINING PEPTIDES			
(57) Abstract			
<p>The present invention relates generally to amino acid sequences obtainable from SOCS proteins and which are capable of interacting with intracellular molecules. The present invention further relates to nucleic acid molecules encoding said amino acid sequences. The amino acid sequences and the nucleic acid molecules encoding same of the present invention are useful in modulating degradation of proteinaceous molecules such as but not limited to SOCS proteins and proteinaceous molecules associated therewith. The present invention provides a mechanism for modulating cytokine or cytokine-like molecule signalling by modulating the degradation of activated signal transduction molecules or their negative regulators, i.e. the SOCS proteins.</p>			

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 99/01134

**A. CLASSIFICATION OF SUBJECT MATTER**

Int Cl<sup>6</sup>: C12N 15/12, A61K 38/17, A01K 67/027

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

DERWENT WORLD PATENTS INDEX (WPAT, WPIDS), CHEMICAL ABSTRACTS (CAPLUS)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
**MEDLINE**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
WPAT, WPIDS, MEDLINE, CAPLUS - socs, elongin, von hippel, jab, sc-motif, ssi, jak binding, proteas?, ubiquit?, degrad?, vhl

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO98/20023A (THE WALTER AND ELIZA HALL INSTITUTE OF MEDICAL RESEARCH) 14 May 1998	1-2, 5-6, 12-13
X	Kamura T <i>et al.</i> , The elongin BC complex interacts with the conserved SOCS-box motif present in members of the SOCS, ras, WD-40 repeat, and ankyrin repeat families, <i>Genes Dev</i> , 15 December 1998, 12(24), 3872-3881	1-13
X	WO98/14574A (OKLAHOMA MEDICAL RESEARCH FOUNDATION) 9 April 1989	7-8, 12

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier application or patent but published on or after the international filing date  
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 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
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Date of the actual completion of the international search  
8 February 2000

Date of mailing of the international search report  
11 FEB 2000

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/01134

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO97/35978A (THE GOVERNMENT OF THE UNITED STATES OF AMERICA, REPRESENTED BY, THE SECRETARY DEPARTMENT OF HEALTH AND HUMAN SERVICES) 2 October 1997	12
P,X	WO99/03993A (SCHERING A.G.) 28 January 1999	1-2, 5-6, 12-13
P,X	WO99/03994A (SCHERING A.G.) 28 January 1999	1-2, 5-6, 12-13
P,X	WO99/40946A (BETH ISRAEL DEACONESS MEDICAL CENTER) 19 August 1999	1-2, 5-6, 12-13
P,X	Zang JG <i>et al.</i> , The conserved SOCS box motif in suppressors of cytokine signaling bind to elongins B and C and may couple bound proteins to proteasomal degradation, <i>Proc Natl Acad Sci USA</i> , 2 March 1999, 96(5), 2071-2076	1-13
P,X	Alexander WS <i>et al.</i> , Suppressors of cytokine signaling (SOCS): negative regulators of signal transduction, <i>J Leukoc Biol</i> , October 1999, 66(4), 588-592	1-13
P,X	Alexander WS <i>et al.</i> , SOCS1 is a critical inhibitor of interferon gamma signaling and prevents the potentially fatal neonatal actions of this cytokine, <i>Cell</i> , 3 September 1999, 98(5), 597-608	1-2, 5-6, 12-13
P,X	Bousquit C <i>et al.</i> , Inhibitory roles for SHP-1 and SOCS-3 following pituitary proopiomelanocortin induction by leukemia inhibitory factor, <i>J Clin Invest</i> , November 1999, 104(9), 1277-1285	1-2, 5-6, 12-13

### Information on patent family members

**PCT/AU 99/01134**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
WO	9820023	AU	46943/97	EP	948522	GB	2331753
		NO	992116				
WO	9814574	AU	48088/97	EP	932673		
WO	9735978	AU	25931/97	EP	889959		
WO	9903993	AU	84845/98				
WO	9903994	AU	84846/98				
WO	9940946	AU	26686/99				
END OF ANNEX							

## PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

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in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 24 July 2000 (24.07.00)	<b>Applicant's or agent's file reference</b> 2211775
<b>International application No.</b> PCT/AU99/01134	<b>Priority date (day/month/year)</b> 21 December 1998 (21.12.98)
<b>International filing date (day/month/year)</b> 21 December 1999 (21.12.99)	
<b>Applicant</b> WILLSON, Tracy, Ann et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

29 June 2000 (29.06.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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